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APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	
	)	
Peter C. JONES et al.	)	Group Art Unit: 2141
	)	
Application No.: 09/891,178	)	Examiner: K. Coulter
	)	
Filed: August 3, 2001	)	
	)	
For: DEFERRED RECONSTRUCTION OF OBJECTS AND REMOTE LOADING FOR EVENT NOTIFICATION IN A DISTRIBUTED SYSTEM	)	

Mail Stop Appeal Brief--Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

SUPPLEMENTAL APPEAL BRIEF UNDER 37 C.F.R. § 1.192

In support of its Notice of Appeal filed April 29, 2004, pursuant to 37 C.F.R. § 1.192, and further to the Notification of Non-Compliance with 37 C.F.R. § 1.192(c) dated October 5, 2004, Appellants present in triplicate this Supplemental Appeal Brief. This brief supplements the Appeal Brief filed on June 29, 2004, and is an appeal to the Board of Patent Appeals and Interferences from a decision finally rejecting claims 21-26, 30-35, and 39-42. The appealed claims are set forth in the Appendix.

If additional fees are required or if the enclosed payment is insufficient, please

charge the deficiencies to Deposit Account No. 06-0916. If a fee is required for an extension of time under 37 C.F.R. § 1.136 and such fee is not accounted for above, Appellants petition for such an extension and request that the fee be charged to Deposit Account No. 06-0916.

I. REAL PARTY IN INTEREST

The real party in interest is Sun Microsystems, Inc., a corporation of Delaware.

II. RELATED APPEALS AND INTERFERENCES

There are no known related pending appeals or interferences directly affected by or having a bearing on the decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 27-29 and 36-38 have been allowed and claims 21-26, 30-35, and 39-42 have been finally rejected and are the subject of this appeal. These claims, including those on appeal, are set forth under the heading APPENDIX. In the Final Office Action dated January 30, 2004, the Examiner rejected claims 21-26, 30-35, and 39-42 under 35 U.S.C. § 102(e) as being unpatentable by Heimsoth et al. (U.S. Patent No. 5,764,915) and allowed claims 27-29 and 36-38.

IV. STATUS OF AMENDMENTS

Appellants filed a preliminary amendment on June 26, 2001 canceling claims 1-

20 and adding claims 26-42 and an amendment on September 5, 2003, amending claim 21 as indicated in the attached Appendix.

V. SUMMARY OF INVENTION

Computing systems today may use Remote Procedure Call (RPC) mechanisms to communicate between two processes running on the same machine or different machines. In a simple case, one process, e.g., a client program, sends a message to another process, e.g., a server program. In this case, it is not necessary for the processes to be synchronized either when the message is sent or received. It is possible for the client program to transmit the message and then begin a new activity, or for the server program's environment to buffer the incoming message until the server program is ready to process a new message.

RPC, however, imposes constraints on synchronism because it closely models the local procedure call, which requires passing parameters in one direction, blocking the calling process (i.e., the client program) until the called procedure of the server program is complete, and then returning a response.

Systems that use platform-independent processes may significantly reduce the difficulties associated with developing programs for heterogeneous distributed systems. Such systems may also use Remote Method Invocation (RMI) mechanisms to communicate among programs. For example, in an environment including two machines, a target machine may respond to a call for an object received from a source machine using RMI to convert the object into a byte stream including an identification of the type of object transmitted and data constituting the object. While the target

machine is responding to the call, a process running on the source or target machine may continue operation without waiting for a response to the request.

The source machine receives the byte stream and, using RMI, automatically converts it into an object corresponding to the requested object. The automatic reconstruction of objects from a byte stream in this manner sometimes requires unnecessary processing. For example, there are times when a call is made that does not require actual or immediate interaction with the object, both of which require conversion of the byte stream to object form. Instead, a call may require passing the object to another call or storing it for later use. In this situation, the reconstruction of the object on an intermediate machine is unnecessary. Accordingly, it is desirable to more efficiently transmit objects in a distributed system without the unneeded conversion of a byte stream to an object on intermediate machines that have no use for the object, or the premature conversion of the byte stream before a process on the receiving machine requires access to the object.

Systems and methods consistent with the present invention address the above problems by managing object transmission and/or receipt in a form of a stream from a remote RPC mechanism and deferring reconstruction of the object until requested to perform reconstruction by a program. (*See e.g.,* Figs. 4-8, page 11, lines 11, page 15, lines 3-9, page 16, line 14 to page 17, line 14; and discussion regarding marshalled and unmarshalled objects, page 19, line 4 to page 21, line 17). Further, certain embodiments of the present invention provide a method for transmitting an object (*See e.g.*, Fig. 6, 605; Fig. 9, 906, marshalled object 912) from a first RPC mechanism (*See*

e.g., Fig. 6, 607; Fig. 9, 905) to a second RPC mechanism (*See e.g.*, Fig. 6, 610; Fig. 9, 908) that is used by a program that includes the processes of forming a stream (*See e.g.*, Fig. 6, 608; Fig. 9, 912) out of the object by the first RPC mechanism, sending the stream to the second RPC mechanism by the first RPC mechanism, receiving the stream by the second RPC mechanism, and deferring reconstruction of the object by the second RPC mechanisms until requested to perform the reconstruction by the program (*See e.g.,* Figs. 6-8, page 19, line 4 to page 21, line 18 and page 24, line 8 to page 25, line 6; and Figs. 9-10 page 25, line 15 to page 26, line 12). In other embodiments, the reconstruction of the object may be deferred by a first RPC mechanism until the stream is returned from a second RPC mechanism in response to the occurrence of an event. (*See e.g.,* Figs. 9 and 10, and page 25, line 8 to page 26, line 12). Further, certain embodiments of the present invention provide a system and method for processing objects in a distributed system comprised of multiple machines that receive a stream containing an identifier of an event listener (*See e.g.,* Fig. 9, 901) and self-describing form of an object associated with a request for notification of particular event with the distributed system. (*See e.g.,* Figs. 3, 4, 5, 9, and 10, page 12, line 11-21, and page 25, line 25 to page 26, line 12). Also, the system and method may, in response to an occurrence of the particular event, send the stream to the identified event listener for reconstruction of the object using program code identified in the stream. (*See Id.*).

VI. ISSUES

The issues in this Appeal are:

(1) whether the Examiner's rejection of claims 21-26, 30-35, and 39-42 under 35 U.S.C. § 102(e) as being unpatentable by Heimsoth et al. can be affirmed when the reference does not support the Examiner's assertions that it teaches, *inter alia*, deferring reconstruction of an object until requested to perform reconstruction by a program using an RPC mechanism, deferring reconstruction of an object by a first RPC mechanism until a stream is returned from a second RPC mechanism to the first RPC in response to the occurrence of an event, a transmitting machine, event generator, and event listener, an intermediate machine, and a receiving machine.

VII. GROUPING OF CLAIMS

In the claims on appeal, claims 21, 23, 25, 30, 32, 34, 39, 40, 41, and 42 are the independent claims. The claims on appeal do not stand or fall together. These claims should be considered in five groups:

Group I: 21, 22, 30, 31, and 39;

Group II: 23, 24, 32, 33, and 40;

Group III: 25, 26, 34, and 35;

Group IV: 41; and

Group V: 42.

The claims have been placed in these groups due to their common subject matter. Appellants, however, have addressed the outstanding rejections in accordance

with the rejections themselves instead of the above identified groupings.

VIII. ARGUMENT

a. Summary of Arguments

Appellants appeal the rejection of claims 21-26, 30-35, and 39-42 under 35 U.S.C. § 102(e) as being unpatentable by Heimsoth et al. because the reference does not support the Examiner's assertions in the Office Action. The Examiner's rejection should be reversed for the following reasons. First, the Heimsoth et al. does not teach at least deferring reconstruction of an object. Second, the positions taken by the Examiner to support the rejection of these claims are improper, and in some instances, unsupported by U.S. Patent Law. Lastly, the Examiner did not properly address all of the recitations of claims 23-26, 32-35, and 39-42 when rejecting these claims but simply relied on the reasons set forth in the rejection of claims 21 and 22.

b. Summary of Claims

Claim 21 is drawn to a method in a data processing system having an RPC mechanism used by a program, the method comprising the steps of receiving an object in a form of a stream from a remote RPC mechanism and deferring reconstruction of the object until request to perform reconstruction by the program.

Claim 30 is drawn to a data processing system comprising elements that perform operations similar to the steps described above with reference to claim 21. Claim 39 is drawn to a computer-readable medium containing instructions for controlling a data

processing system to perform the method described above with reference to claim 21. Claims 22 and 31 depend from claims 21 and 30, respectively, and are drawn to a step of, and a module configured for, reconstructing an object using code identified in the stream, when requested to perform reconstruction by the program.

Claim 23 is drawn to a method in a data processing system for transmitting an object from a first RPC mechanism to a second RPC mechanism that is used by a program, that comprises the steps of forming a stream out of the object by the first RPC mechanism and sending the stream to the second RPC mechanism by the first RPC mechanism. The method further includes receiving the stream by the second RPC mechanism and deferring reconstruction of the object by the second RPC mechanism until requested to perform the reconstruction by the program. Claim 32 is drawn to an apparatus comprising elements that perform operations similar to the steps described above with reference to claim 23 . Claim 40 is drawn to a computer-readable medium containing instructions for controlling a data processing system to perform the method described above with reference to claim 23. Claims 24 and 33 depend from claims 23 and 32, respectively, and are drawn to a process step of, and a module configured for, reconstructing an object using code identified in the stream, when requested to perform reconstruction by the program.

Claim 25 is drawn to a method in a data processing system system for transmitting an object from a first RPC mechanism to a second RPC mechanism. The claimed method comprises the steps of forming a stream out of the object by the first RPC mechanism and sending the stream from the first RPC mechanism to the second

RPC mechanism. The method further includes the steps of storing the stream by the second RPC mechanism and deferring reconstruction of the object by the first RPC mechanism until the stream is returned from the second RPC mechanism to the first RPC mechanism in response to the occurrence of an event. Claim 34 is drawn to an apparatus comprising elements that perform operations similar to the steps described above with reference to claim 25. Claims 26 and 35 depend from claims 25 and 34, respectively, and are drawn to a process step of, and a module configured for, reconstructing an object by the first RPC mechanism using code identified in the stream.

Claim 41 is drawn to an apparatus for providing notification of an event in a distributed system. The apparatus includes a transmitting machine configured to specify an object associated with a request for notification of the event, and form a stream out of the object. The apparatus includes an event generator configured to, upon receipt of the stream, store the stream, and in response to occurrence of the event, output the stream. Also, the apparatus includes an event listener configured to, upon receipt of the stream from the event generator, reconstruct the object by accessing program code identified in the stream.

Claim 42 is drawn to an apparatus for deferring reconstruction of an object in a distributed system including a transmitting machine configured to specify an object, form a stream out of the object, and send the stream to an intermediate machine. The intermediate machine is configured to receive the stream from the transmitting machine, store the stream, and in response to occurrence of an event, send the stream

to a receiving machine. Further, the receiving machine is configured to receive the stream from the intermediate machine, and reconstruct the object by accessing program code identified in the stream.

c. The rejection of claims 21, 22, 30, 31, and 39 under 35 U.S.C. § 102(e) must be reversed because (1) Heimsoth et al. does not support the Examiner's assertion that the reference teaches, *inter alia,* deferring reconstruction of the object until requested to perform reconstruction by the program, and (2) the Examiner's positions taken to support the asserted rejection are improper and unsupported by U.S. Patent Law.

In order to properly anticipate Appellants' claimed invention under 35 U.S.C. § 102(e), each and every element of the claim in issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Further, "[t]he identical invention must be shown in as complete detail as is contained in the...claim." See M.P.E.P. § 2131 (8th Ed., Aug. 2001), quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Finally, "[t]he elements must be arranged as required by the claim." M.P.E.P. § 2131 (8th Ed. 2001), p. 2100-69.

In rejecting claim 21 under 35 U.S.C. § 102(e), the Examiner asserts that Heimsoth et al. teaches "deferring reconstruction of the object until requested to perform reconstruction by the program (Fig. 9D; col. 29, lines 41-46; col. 31, lines 5-18)." *See Final Office Action, page 2, ¶ 2.1.* Appellants respectfully disagree with the Examiner's interpretation of Heimsoth et al.

Heimsoth et al. teaches an object-oriented protocol interface that establishes communication paths between endpoints in a network. According to Heimsoth et al., the interface uses the same set of protocol class objects to develop several protocol layers. The Examiner contends that the rebuilding process performed by the server taught by Heimsoth et al. (in column 29, lines 41-46 and column 31, lines 5-18) teaches deferring reconstruction of an object until requested by a program. Appellants respectfully submit that the Examiner is wrong as to this interpretation of the reference.

As argued by Appellants in an Amendment and Request for Reconsideration filed September 5, 2003, the client-server communication process disclosed by Heimsoth et al. allows an AccessOP object to be sent to a server using RPC mechanisms. The server rebuilds the object using specific code (e.g., TNetworkOperation) and calls a specific method, which results in the creation of protocol layer objects. *See Heimsoth et al., col. 29, lines 41-49.* Further, Heimsoth et al. discloses a communication process that allows a server to rebuild an object sent to the server by a client using an RPC mechanism. Accordingly, Heimsoth et al. merely discloses communication processes that use conventional RPC mechanisms that include object rebuilding functions. Heimsoth et al. does not teach or suggest deferring the reconstruction of an object received in the form of a stream from an RPC mechanism, as asserted by the Examiner.

In an attempt to address the above arguments, the Examiner asserts that "[c]laim 21 is indistinguishable from conventional systems since the claimed deferring process does not express a reason for deferring or a timetable for deferring. Claim 21

merely states that reconstruction of the object is deferred until a program requests the reconstruction." *See Final Office Action, page 4, lines 1-8.* Appellants respectfully submit that the Examiner's position that the claim requires something more to distinguish it from Heimsoth et al. is wrong for at least the following reasons.

To begin with, the Examiner merely concludes that claim 21 is "indistinguishable from conventional systems" without providing evidence to support the conclusion. That is, if the Examiner's position is that there are conventional systems that teach deferring reconstruction of an object until requested to perform reconstruction by a program, the Examiner is required to present such evidence. Also, if the Examiner asserts that Heimsoth et al. is an indistinguishable "conventional system," the Examiner has not pointed to any portion of the reference to support that position. Rather, the Examiner relies on the same reasoning and citations presented in the Office Action dated June 6, 2003, without fully addressing Appellants' arguments stating otherwise.

Second, the Examiner's position that claim 21 is indistinguishable from conventional systems because the deferring process "does not express a reason for deferring or a timetable for deferring" is unsupported by U.S. patent law, rules, and the proper application of 35 U.S.C. § 102. There is no legal requirement for Appellants to claim a reason for performing a process step to avoid a rejection under 35 U.S.C. § 102(e). In order to properly anticipate Appellants' claimed invention under 35 U.S.C. § 102(e), each and every element of the claim in issue must be found, either expressly described or under principles of inherency, in a single prior art reference. In this case, the Examiner has presented no evidence of Heimsoth et al. teaching the

deferral of object reconstruction. Moreover, the Examiner has not established that the prior art inherently teaches such processes.

Instead, the Examiner merely states that the claim is indistinguishable from the prior art because it does not claim some element or reason. This is an improper application of 35 U.S.C. § 102. The Examiner cannot rely on the position that a claim is anticipated by a prior art reference because that claim does not recite additional elements or features. Instead, the Examiner must show where the prior art teaches the claimed recitations. The Examiner has not met this burden.

Because Heimsoth et al. does not support the rejection of claim 21, and the Examiner's positions in support of this rejection are improper, Appellants respectfully request that the rejection of this claim under 35 U.S.C. § 102(e) be reversed and the claim allowed.

Claim 30 is drawn to a data processing system comprising elements that perform operations similar to the steps described above with reference to claim 21. Claim 39 is drawn to a computer-readable medium containing instructions for controlling a data processing system to perform the method described above with reference to claim 21. As explained, the rejection of claim 21 is unsupported by the cited art. Accordingly, it follows that the rejection of claims 30 and 39 are also unsupported by the cited art and Appellants request that the rejection of these claims be reversed and the claims allowed.

Claims 22 and 31 depend from claims 21 and 30, respectively. As explained, the rejection of claim 21 is not supported by the cited art. Accordingly, it follows that the

rejection of claims 22 and 31 are also unsupported by the cited art. Therefore, Appellants request that the rejection of claims 22 and 31 be reversed and the claims allowed. Further, Appellants traverse the Examiner's assertion that Heimsoth et al. teaches "reconstructing the object using code identified in the stream, when requested to perform reconstruction by the program (Fig. 9D; col. 29, lines 41-46; col. 31, lines 5-18)." *See Final Office Action, page 3, ¶ 2.2.* As explained, Heimsoth et al. provides no support for the Examiner's contentions. Instead, the reference merely describes conventional RPC processes without discussing the reconstruction of the object using code identified in the stream when requested by a program, as alleged by the Examiner.

Accordingly, the cited art does not support the rejection of claims 22 and 31, and Appellants respectfully request that the rejection of these claims be reversed and the claims allowed.

d. The rejection of claims 25, 26, 34, and 35 under 35 U.S.C. § 102(e) must be reversed because Heimsoth et al. does not support the Examiner's assertion that the reference teaches, *inter alia,* deferring reconstruction of the object by the first RPC mechanism until the stream is returned from the second RPC mechanism to the first RPC mechanisms in response to the occurrence of an event.

In an attempt to reject claim 25, the Examiner asserts that Heimsoth et al. teaches, *inter alia,* "deferring reconstruction of the object by the first RPC mechanism until the stream is returned from the second RPC mechanism to the first RPC mechanism in response to the occurrence of an event (Fig. 9D; col. 29, lines 41-46; col.

31, lines 5-18)." *See Final Office Action, page 3, ¶ 2.3.* In fact, Appellants note that the Examiner cites to the same portions of Heimsoth et al. that are relied upon to reject claim 21. Appellants disagree with the Examiner's interpretation of Heimsoth et al.

As explained in the arguments set forth above in connection with Claim 21, Heimsoth et al. describes communication processes that use conventional RPC mechanisms that include object rebuilding functions. That is, the reference discloses communication process that enable an object to be sent to a server using RPC mechanisms. The server rebuilds the object using specific code (e.g., TNetworkOperation) and calls a specific method, which results in the creation of protocol layer objects. *See Heimsoth et al., col. 29, lines 41-49.* The server may also rebuild an object sent to it by a client using an RPC mechanism. Although the cited art may disclose rebuilding objects, it does not teach or suggest deferring the reconstruction of an object by the first RPC mechanism until the stream is returned from the second RPC mechanism to the first RPC mechanism in response to the occurrence of an event, as asserted by the Examiner.

In light of the above remarks, Appellants assert that the rejection of claim 25 is not supported by the cited reference. Accordingly, Appellants respectfully request that the rejection of this claim under 35 U.S.C. § 102(e) be reversed and the claim allowed.

Claim 34 is drawn to an apparatus comprising elements that perform operations similar to the steps described above with reference to claim 25 . As explained, the rejection of claim 25 is unsupported by the cited art. Accordingly, it follows that the

rejection of claim 34 is also unsupported by the cited art and Appellants request that the rejection of this claim be reversed and the claim allowed.

Claims 26 and 35 depend from claims 25 and 34, respectively. As explained, the rejection of claims 25 and 34 are not supported by the cited art. Accordingly, it follows that the rejection of claims 26 and 35 are also unsupported by the cited art. Therefore, Appellants request that the rejection of these claims be reversed and the claims allowed.

e. The rejection of claims 23, 24, 32, 33, and 40 under 35 U.S.C. § 102(e) must be reversed because (1) Heimsoth et al. does not support the Examiner's assertion that the reference teaches, *inter alia,* deferring reconstruction of the object by the second RPC mechanism requested to perform the reconstruction by the program, and (2) the Examiner improperly relies on the rejection of claims 21, 22, and 25 to support the rejection of these claims.

Claims 23, 32, and 40 include recitations similar to those of claim 21. As explained, Heimsoth et al. does not support the rejection of claim 21. Accordingly, it follows that the cited art does not support the rejection of claims 23, 32. and 40 for at least the same reasons set forth in connection with claim 21.

Moreover, Heimsoth et al. does not teach, and the Examiner does not address, deferring reconstruction of an object by a second RPC mechanism that receives the stream, until requested to perform the reconstruction by the program. Appellants pointed out in the Amendment and Request for Reconsideration filed September 5, 2003, that the Examiner failed to address, among other things, all of the features of claims 23, 32, and 40. *See Response filed September 5, 2003, pages 20-21 and*

23-25. In response, the Examiner again chose not to address the recitations of these claims in support of their rejection under 35 U.S.C. § 102(e) in the Final Office Action. Instead, the Examiner merely relies on the rejection of claims 21, 22, and 25 without substantially addressing claims 23, 32, and 40. *See Final Office Action, page 3, ¶ 2.4.* This is improper, and thus the rejection of these claims should be reversed.

In light of the above remarks, Appellants respectfully request that the rejection of these claims under 35 U.S.C. § 102(e) be reversed and the claims allowed.

Claims 24 and 33 depend on claims 23 and 32, respectively. As explained, Heimsoth et al. fails to support the rejection of claims 23 and 32. Accordingly, it follows that the cited art does not support the rejection of claims 24 and 33, and Appellants respectfully request that the rejection of these claims under 35 U.S.C. § 102(e) be withdrawn and the claims allowed.

f. The rejection of claim 41 under 35 U.S.C. § 102(e) must be reversed because (1) Heimsoth et al. does not support the Examiner's assertion that the reference anticipates the claim, and (2) the Examiner improperly relies on the rejection of claims 21, 22, and 25 to support the rejection of this claim.

In rejecting claim 41, the Examiner asserts that the "rejection of claims 21, 22, and 25 under 35 U.S.C. § 102(e) (paragraphs 2.1-2.3 above) applies fully." *See Final Office Action, page 3, ¶ 2.4.* Appellants disagree with the Examiner's position for the following reasons.

First, the Examiner improperly relies on the rejection of claims 21, 22, and 25 to support the assertion that Heimsoth et al. teaches an apparatus for providing notification of an event in a distributed system including, among other things, a transmitting machine, an event generator, and an event listener that is configured to reconstruct an object by accessing program code identified in a stream. Because these features are not recited in claims 21, 22, and 25, the Examiner's position that the rejection of these claims apply to the recitations of claim 41 is improper and should be reversed.

Further, Appellants note that Heimsoth et al. does not teach a transmitting machine, an event generator, and an event listener that is configured to reconstruct an object by accessing program code identified in a stream, as implied by the Examiner. As explained, Heimsoth et al. merely describes processes that allow a server to build an object, but fails to disclose event listeners and generators as mentioned above.

Accordingly, the cited art does not support the rejection of claim 41 and Appellants respectfully request that the rejection be reversed and the claim allowed.

g. The rejection of claim 42 under 35 U.S.C. § 102(e) must be reversed because (1) Heimsoth et al. does not support the Examiner's assertion that the reference anticipates the claim, and (2) the Examiner improperly relies on the rejection of claims 21, 22, and 25 to support the rejection of this claim.

In rejecting claim 42, the Examiner asserts that the "rejection of claims 21, 22, and 25 under 35 U.S.C. § 102(e) (paragraphs 2.1-2.3 above) applies fully." *See Final*

Office Action, page 3, ¶ 2.4. Appellants disagree with the Examiner's interpretation of Heimsoth et al.

To begin with, the Examiner improperly relies on the rejection of claims 21, 22, and 25 to support the assertion that Heimsoth et al. teaches an apparatus for deferring reconstruction of an object including, among other things, a transmitting machine configured to specify an object, form a stream out of the object, and send the stream to an intermediate object, and the intermediate machine configured to send the stream to a receiving machine in response to an occurrence of an event, and the receiving machine configured to reconstruct the object by accessing program code identified in the stream. Because these features are not recited in claims 21, 22, and 25, the Examiner's position that the rejection of these claims apply to the recitations of claim 42 is improper and should be reversed.

Additionally, Heimsoth et al. does not teach or suggest the above-noted features, as alleged by the Examiner. The server may also rebuild an object sent to it by a client using an RPC mechanism. Although the cited reference may disclose rebuilding objects, it does not teach or suggest an intermediate machine configured to send the stream to a receiving machine in response to an occurrence of an event, and a receiving machine configured to reconstructing the object by accessing code identified in the stream, as asserted by the Examiner.

In light of the above remarks, the cited art does not support the rejection of claim 42 and Appellants respectfully request that the rejection be reversed and the claim allowed.

IX. CONCLUSION

The final rejection of claims 21-26, 30-35, and 39-42 should be reversed because Heimsoth et al. does not support the rejection of these claims, as asserted by the Examiner. Accordingly, Appellants respectfully request such reversals.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this Supplemental Appeal Brief, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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By: _____

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Dated: October 14, 2004

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APPENDIX

Claims 1-20 (Canceled)

Claim 21. (Previously Amended) In a data processing system having an RPC mechanism used by a program, a method for transmitting objects comprising:

receiving an object in a form of a stream from a remote RPC mechanism; and

deferring reconstruction of the object until requested to perform reconstruction by the program.

Claim 22. (Previously Presented) The method of claim 21, further comprising:

reconstructing the object using code identified in the stream, when requested to perform reconstruction by the program.

Claim 23. (Previously Presented) A method in a data processing system for transmitting an object from a first RPC mechanism to a second RPC mechanism that is used by a program, comprising:

forming a stream out of the object by the first RPC mechanism;

sending the stream to the second RPC mechanism by the first RPC mechanism;

receiving the stream by the second RPC mechanism; and

deferring reconstruction of the object by the second RPC mechanism until requested to perform the reconstruction by the program.

Claim 24. (Previously Presented) The method of claim 23, further comprising the step, performed by the second RPC mechanism, of:

reconstructing the object using code identified in the stream, when requested to perform reconstruction by the program.

Claim 25. (Previously Presented) A method in a data processing system for transmitting an object from a first RPC mechanism to a second RPC mechanism, comprising:

forming a stream out of the object by the first RPC mechanism;

sending the stream from the first RPC mechanism to the second RPC mechanism;

storing the stream by the second RPC mechanism; and

deferring reconstruction of the object by the first RPC mechanism until the stream is returned from the second RPC mechanism to the first RPC mechanism in response to the occurrence of an event.

Claim 26. (Previously Presented) The method of claim 25, further comprising:

reconstructing the object by the first RPC mechanism using code identified in the stream.

Claim 27. (Previously Presented) A method for processing objects in a distributed system comprised of multiple machines, comprising:

receiving a stream containing an identifier of an event listener and a self-describing form of an object associated with a request for notification of a particular event within the distributed system; and

in response to occurrence of the particular event, sending the stream to the identified event listener for reconstruction of the object using program code identified in the stream.

Claim 28. (Previously Presented) The method of claim 27, wherein the stream is received from the event listener.

Claim 29. (Previously Presented) The method of claim 27, wherein the stream is received from a machine other than the event listener.

Claim 30. (Previously Presented) An apparatus for processing objects in a data processing system comprising:

a module configured to

receive an object in a form of a stream from a remote RPC mechanism, and

defer reconstruction of the object until requested to perform reconstruction by the program.

Claim 31. (Previously Presented) The apparatus of claim 30, further comprising:

a module configured to reconstruct the object using code identified in the stream, when requested to perform reconstruction by the program.

Claim 32. (Previously Presented) An apparatus for transmitting an object from a first RPC mechanism to a second RPC mechanism that is used by a program, comprising:

a module configured to form a stream out of the object by the first RPC mechanism;

a module configured to send the stream to the second RPC mechanism by the first RPC mechanism;

a module configured to receive the stream by the second RPC mechanism; and

a module configured to defer reconstruction of the object by the second RPC mechanism until requested to perform the reconstruction by the program.

Claim 33. (Previously Presented) The apparatus of claim 32, further comprising:

a module configured to reconstruct the object using code identified in the stream, when requested to perform reconstruction by the program.

Claim 34. (Previously Presented) An apparatus for transmitting an object from a first RPC mechanism to a second RPC mechanism, comprising:

a module configured to form a stream out of the object by the first RPC mechanism;

a module configured to send the stream from the first RPC mechanism to the second RPC mechanism;

a module configured to store the stream by the second RPC mechanism; and

a module configured to defer reconstruction of the object by the first RPC mechanism until the stream is returned from the second RPC mechanism to the first RPC mechanism in response to the occurrence of an event.

Claim 35. (Previously Presented) The apparatus of claim 34, further comprising:

a module configured to reconstruct the object by the first RPC mechanism using code identified in the stream.

Claim 36. (Previously Presented) An apparatus for processing objects in a distributed system comprised of multiple machines, comprising:

a module configured to receive a stream containing an identifier of an event listener and a self-describing form of an object associated with a request for notification of a particular event within the distributed system;

a module configured to send, in response to occurrence of the particular event, the stream to the identified event listener for reconstruction of the object using program code identified in the stream.

Claim 37. (Previously Presented) The apparatus of claim 36, wherein the receiving module receives the stream from the event listener.

Claim 38. (Previously Presented) The apparatus of claim 36, wherein the receiving module receives the stream from a machine other than the event listener.

Claim 39. (Previously Presented) A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having an RPC mechanism used by a program, the method comprising the steps performed by the RPC mechanism of:

receiving an object in a form of a stream from a remote RPC mechanism; and

deferring reconstruction of the object until requested to perform reconstruction by the program.

Claim 40. (Previously Presented) A computer-readable medium containing instructions for controlling a data processing system to perform a method, the method for transmitting an object from a first RPC mechanism to a second RPC mechanism that is used by a program, the method comprising the steps of:

forming a stream out of the object by the first RPC mechanism;

sending the stream to the second RPC mechanism by the first RPC mechanism;

receiving the stream by the second RPC mechanism; and

deferring reconstruction of the object by the second RPC mechanism until requested to perform the reconstruction by the program.

Claim 41. (Previously Presented) An apparatus for providing notification of an event in a distributed system, comprising:

a transmitting machine configured to specify an object associated with a request for notification of the event, and form a stream out of the object;

an event generator configured to, upon receipt of the stream, store the stream, and in response to occurrence of the event, output the stream; and

an event listener configured to, upon receipt of the stream from the event generator, reconstruct the object by accessing program code identified in the stream.

Claim 42. (Previously Presented) An apparatus for deferring reconstruction of an object in a distributed system, comprising:

a transmitting machine configured to specify an object, form a stream out of the object, and send the stream to an intermediate machine;

the intermediate machine configured to receive the stream from the transmitting machine, store the stream, and in response to occurrence of an event, send the stream to a receiving machine; and

the receiving machine configured to receive the stream from the intermediate machine, and reconstruct the object by accessing program code identified in the stream.